

FOR ALL HOME CRAFTSMEN Over 60 years of 'Do-it-Yourself'

MAKING UP THE 'KENNEL' MONEY BOX

THIS attractive design for a money box can be undertaken with confidence, as the make-up is quite simple. The layout consists of a dog kennel forming a compartment where the coins are saved, a model smooth terrier dog and feeding dish.

The dog, supplied with a Hobbies kit of materials, is cast in metal and stands quite firmly, there being no need to fix it to the base. There is a dummy entrance to the kennel and the money is extracted from an opening underneath the model, which is approximately $\$_{2}^{1}$ ins. long, 4_{3}^{1} ins. high and 3_{2}^{1} ins. wide. It makes quite an attractive layout for standing on the sideboard or mantelshelf, forming a constant reminder of the need for saving for any specific purpose such as holidays, etc.

All parts which go towards the makeup of the model are shown full size on the design sheet. Trace the various pieces from the design sheet and transfer them to their appropriate thicknesses of wood by means of carbon paper. Next cut them out with the fretsaw and clean up well with glasspaper. Note the chamfer on the sides (2) and roof pieces 6 and 7.

To commence assembly, glue piece 4 on to the back of piece 3, thus blocking



the entrance as seen in Fig. 1. Glue the sides (2) and remaining end (5) in position, noting the direction of the chamfer on pieces 2 to allow for the

All the panels of wood for making the 'Kennel' Money Box are contained in Hobbies Kit No. 3304, together with a metal model of the terrier illustrated. Kits cost 8/2 from branches or by post from Hobbies Ltd., Dereham, Norfolk (post 1/6 extra).

slope of the roof pieces, 6 and 7, which are the next to be added. It will be seen that roof piece 6 contains the slot to take the coins, and if desired this can be placed at the back of the model instead of the front as shown.



Now leave the kennel structure and cut the circle from the base (piece 1). Hold the saw at an angle when cutting round the circle, so as to form a wedgelike piece which will later be refitted to the hole and kept in position by pasting over brown paper.

The kennel can now be glued on to the base in the position shown by the dotted lines on the design sheet.

The feeding dish is formed from two pieces 8 and 9, which are glued together, and the edges shaped according to the section shown on the design sheet. The dish is glued to the base in front of the kennel 'entrance'.

Clean up the model thoroughly with glasspaper and fill any gaps with woodfiller. The model should be painted according to individual choice, a suggestion being green for the base and a brown kennel with black roof. Brighter colour combinations can, of course, be chosen if desired.

To open the box at the end of the saving period, it is only necessary to remove the brown paper from underneath the base, which releases the disc. This is replaced and resealed for further saving.

MIDGET AND GIANT

NEW midget camera 'little bigger than a cigarette lighter' has its own built-in exposure meter coupled to the shutter. Its pictures measure 8 mm. by 11 mm. (roughly $\frac{1}{2}$ ins. by $\frac{1}{2}$ in.) and are said to be capable of enlargement up to many times the size of the original. The camera is being made in Germany.

At the other end of the scale, a giant camera designed by the U.S. for research into problems connected with guided missiles, takes pictures 9ins. square. It uses a film 200 feet long — enough for 250 pictures. The same length and width of sensitised material would make 280 ordinary sized roll films. (E.D.)

DECORATING WHITEWOOD

By S.H.L.



WHITEWOOD ware offers plenty of scope for original treatment and there are many inexpensive articles available. These include egg cups, napkin rings, toast racks, boxes for cigarettes or playing cards, wool holders, pin trays, bookends, matchbox holders, small bowls and many others which you may make.

Once the articles are purchased or made, the main task is in the preparation







of a suitable design, but since treatment is so flexible you may incorporate monograms for personal gifts or paint small animals on children's presents. No special tools are required and different effects result by combining various methods.

One of the secrets of achieving perfect results is the correct preparation of the wood and a sizing process which not only seals the pores to ease the painting but also saves paint and varnish. First of all the article is given a thorough smoothing by rubbing over with the finest glasspaper, following the grain of the wood. Take one teaspoonful of powdered size, placing in an average size cup. Add a little cold water to swell the grains, leaving aside for about fifteen minutes. Now half fill the cup with hot water, stirring briskly until every particle of size has dissolved. You may apply the size while still warm with a small paint brush, leaving aside until perfectly dry

before starting to add the design or paint. If you wish to tint the woodwork at this stage, colour may be added to the size.

The illustration heading this article shows methods of treatment and this has been designed to show the flexibility. Your design can be geometric, that is, based on arcs, circles, squares, oblongs or triangles, or patterns may be formed from these shapes; or you may draft a simple design incorporating flowers. It is unwise to 'over design' a pattern and simplicity is often the most effective, also you will see how it becomes possible to modify the square lines, introducing arcs as the dividing lines and adding different motifs in alternate sections. The righthand side of both these figures gives some idea of the resulting pattern when we have discarded the basic squares.

Bold, straight lines with unequal spacing look very effective in combination with a single wavy line and there are many kinds of flower motifs you may use.



of course, we may consider suggestions arising from the object itself. An egg cup intended for a child for instance may bear a chicken or a favourite nursery rhyme character; a box for holding playing cards may have spades, hearts, diamonds or clubs incorporated. The aim is to produce a neat little design which bears some relationship to the object.

The pattern should not appear too stiff and rigid like a mechanical printing or transfer, for the freehand finishing is actually part of the beauty. It is easy to invent original designs from basic shapes but if you still find some difficulty you may always observe the designs on crockery, wallpaper or needlework.

Figs. I(A), (B), (C), (D), and (E) show how squares, triangles and circles can form the basic areas for pattern motifs and the other figures show their development.

No doubt you will have noticed that many modern wallpapers have what is termed a counterchange pattern, that is an alternate arrangement of motifs in a' square, and something of the kind is shown in Fig. 2(A). This shows how our simple designs may be invented but if you proceed a step further as in Fig. 2(B)





When transferring a pattern to the woodwork either sketch this directly on to the ware or trace it onto the wood. In both cases it is important to use a soft lead pencil with a minimum of pressure, for it is essential that the wood is free of any impression.

Perhaps the easiest medium to use is water-colour, but where bolder patterns are involved it is wiser to use poster colours.

Mix the paint thoroughly so that the pigment is evenly distributed and the consistency whilst not too thin permits of easy brushwork. Too much water in the paint may cause the wood grain to rise, making the surface rough, and this should be avoided. Take the precaution of mixing sufficient paint to do the whole pattern for it may be impossible to rematch if a second quantity is needed.

Oil copal varnish is the best for finishing purposes giving two coats for a superfine effect.

Wiring instructions

THE MIDGET MAINS SET

OMMENCE wiring, using mostly single insulated connecting wire. Stranded wire is used only in certain sections which are mentioned later.

First do the heater wiring. Join the centre spigot of V1 valveholder to tag 3 of the holder, carry on to tag 2, then from there to solder tag on chassis. Go over to V2 and join centre spigot to tag 4, then to chassis solder tag. Then turn to V3, joining centre spigot to tag 4, then from there to chassis tag.

R2 to chassis tag and R3 to C4 (\cdot 0001). The end of C4 is joined to the coil L2 long winding. (Follow the coil maker's direction to get the correct tag on the coil. Each make has its own peculiar system of connection.) The theoretical diagram will help here. From the tag to which C4 is joined, take a stranded lead and pass through grommet hole (A), draw it out from under the tuning condenser and solder it to the tag on the front section of the condenser.

Join tag 6 of V1 to coil L2 (small



Fig. 2-Reprinted from last week's issue

With V4, the centre spigot is joined to tag 6, 5, then chassis solder tag. With V5, centre spigot is joined to tag 4, from there to chassis tag.

Go back to V1. From tag 4 join a wire and take to tag 3 of V2, then from here to tag 3 of V3, then from here to tag 4 of V4, and from there to tag 3 of V5. From this last tag (3) lead a stranded wire round the volume control (keeping it close to the chassis like all heater wiring should be) and pass it through the grommet hole (C) to the heater transformer (H.T.). Join it to one of the $6\cdot3$ volt tags on the transformer. The other $6\cdot3$ volt tag is joined to the chassis solder tag.

Turn back to the under chassis. Join R2 (.22K) and R3 (120) to tag 1. Take

winding). The correct tag will be shown in the coil maker's leaflet. The tag which is the other end of this small winding is joined to the padder C5 (470 pfd.), whose other end goes to chassis.

To tag 7 of VI join R1 (Im) and C3 (0001). Join a lead to the other end of C3 and pass through grommet (B) to the tag on the back section of the tuning condenser.

R1 is taken to the I.F.T. tag. To this tag join also C8 $(\cdot 1)$ and R16 (2m). C8 goes to chassis tag. R16 goes to right-hand tag on volume control (R7).

Complete V1 by joining tag 5 to I.F.T. tag as shown (Q).

Tag 1 of $\sqrt{2}$ is joined to I.F.T. (S). Tag 2 goes to tag 7, then to C9 (\cdot 1) and R6 (68). These latter are taken to chassis tag. Take tag 6 of V2 to R5 (15K) which goes to tag strip (M). Join R tag of I.F.T. to this same point. Join C7 (\cdot) between chassis and lower end of R5 as shown.

Lastly join tag 5 (V2) to tag Y of I.F.T. 2. Join tag Z of this I.F.T. 2 to tag strip (M). Join W tag to tag 5 and 6 on V3. Join a screened lead to X of I.F.T.2 and take round V3 to R8 (50K) and C10 (\cdot 0001). Earth the outer metal braiding of the screened lead to chassis and join R8 to right-hand tag of volume control (R7). Take C10 to chassis tag. Join C11 (\cdot 0001) across the chassis tag and volume control tag just mentioned.

Connect tag 2 on V3 to chassis. Connect R9 (220K) between tag 7 of V3 to tag strip (M). Join R10 (220K) to tag 1 (V3). To the free end of R10, join C12 (\cdot 01) and R11 (10M). C12 goes to centre tag of volume control and R11 to chassis. Join left-hand tag of control (R6) to chassis.

Now join C13 (\cdot 01) to tag 7 of V3 and take to tag 2 of V4. From this last tag also take R12 (470K) to chassis.

Join tags 3 and 9 of $\sqrt{4}$ to R13 (220) and C15 (25 mfds.). These go to chassis. Join a stranded lead, about 6ins. long, to tag 7 ($\sqrt{4}$) and pass through chassis grommet hole, and leave it free for the time being.

Join M tag strip to tag 8 of V4, and thence to tag of C14, 16 condenser (right-hand tag). From same tag take R4 (10K) to C6 (\cdot 1) (which goes to chassis) and continue to coil L2, to smaller winding.

Join R14 ($2\cdot 2K$) across tags of C14, 16 condenser. Also to left-hand tag join a stranded lead 6ins. long and an ordinary lead. Pass the stranded lead through chassis hole (D) and leave for the time being. Take other lead to tag 7 on V5.

Join tags 1 and 6 on V5 and add R15 (120) which goes to tag strip K.

Take the mains flex lead and join one end to tag strip K, the other end to one of the switch tags (S) on volume control. The other S tag goes to chassis.

Join a stranded lead to tag strip K and pass through grommet C, and leave for the time being. Tie a knot in the flex and pass the remainder through grommet E.

The lead through C is now soldered to one tag of the primary winding on the heater transformer. Join the 01 (C17) from this tag to the other tag of the primary, then join this last tag to chassis.

If there is no leaflet explaining the tag or lead connections on the heater • Continued on page 341



MAKING A TEA TROLLEY

F you are planning on making some useful items of furniture for your home then why not start with a handy tea trolley? The construction is quite simple it does not take very long to make. Use a hardwood such as mahogany, walnut or oak to match the existing furniture in the room where the trolley is to be placed. The construction is as follows.

First of all, cut the four legs from 1§in. by 1§in. planed timber. A suitable length for the legs is 2ft. 3ins. which will give a total height of approximately 2ft. 6ins. after the trolley wheels have been fitted. The rails should be made



from $1\frac{1}{2}$ in. by $\frac{3}{2}$ in. planed timber. Cut eight rails in all, four at 1ft. 4ins. and four at 2ft. 3ins.

Once the legs and rails have been cut to the required lengths they should be jointed together to make the framework of the trolley. Use mortice and tenon joints throughout. Note that the ends of the tenons should be mitred as shown in Fig. 2. The positioning of the rails to the legs is not very important and may be positioned to suit your own requirements. After making the framing joints, round off the upper surfaces of the rails to give a neater appearance. Also, chamfer off the top edges of the four legs as shown in Fig. 2.

When all the preparatory work has been done, test each joint individually to ensure that it fits accurately and afterwards assemble the frame. Use a strong glue when assembling each joint and do make sure that the tenons go well 'home'. Use cramps, if necessary, to keep the



joints tight. The assembled frame should then be left untouched for at least 24 hours to allow the glued joints to set hard.

The next job is the cutting of the shelves. These are made from 1 in. thick veneered faced plywood. The shelves should be cut as shown in Fig. 3, which allows for the outer edges to project a little beyond the rails as indicated in Fig. 4. To make a neater job, round off the top edges. The shelves are secured in position by inserting $\frac{3}{4}$ in. screws at 3in. intervals into the rails from underneath.

Finally, obtain a set of $2\frac{1}{2}$ in. diameter trolley wheels and fix these to the bottoms of the legs.

To complete the job, give the trolley a good rub over with some fine glasspaper and then apply a few coats of french polish. (F.K.)

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The Midget Mains Set

transformer, and you are at a loss about them, just remember that the primary is wound with thin wire and the secondary (heater) wire is of thick wire.

Now turn to the output transformer. This, again, has a primary of thin wire and a secondary of thick wire. Join the leads from grommet D to the ends of the primary winding, and across them join C18 (.005).

Join stranded leads to the loudspeaker. Then mount the speaker on the chassis front by means of short metal strips. (See Fig. 5.) Take the flying leads to the secondary of output transformer The wiring is now completed. We have only the frame aerial to connect now.

In conclusion, next week's issue will contain full working details of the frame aerial, the tuning dial, the set alignment and cabinet construction.

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SPOT TESTS Part 2

RGANIC compounds offer a tremendous range of coloured spot tests. Large volumes have been published on the subject and spot test technique is widely used in detecting minute amounts of organic compounds.

Using common substances and reagents you can acquire an instructive introduction to this increasingly important oranch of analysis.



you will not obtain a precipitate of silver.

Potassium permanganate, too, is a valuable reagent. Put a drop of potassium permanganate in a small evaporating basin and spot it with a drop of lactic acid solution. The lactic acid decolourises the purple of the permanganate.

It also serves for the detection of oxalic acid and oxalates. Put into an evaporating basin a drop each of oxalic acid solution (or of an oxalate), dilute sulphuric acid and potassium permanganate solution. The purple colour is not discharged. Now warm the basin over a small flame or on a water-bath. The liquid is decolourised.

Several interesting spot tests can be carried out with tartaric acid or a tartrate. Put a small crystal of one of these in an evaporating basin, add a drop of strong sulphuric acid and heat the to be preferred to heating over a bare flame.

Now substitute pyrogallol for resorcinol and repeat the test. This time a lovely violet-blue colour will be seen.

Yet another spot test for the acid and tartrates is to put into an evaporating basin a drop each of solutions of tartaric acid or a tartrate, ferrous sulphate and hydrogen peroxide. Spot on three drops of sodium or potassium hydroxide solution. A fine colouration appears ranging from blue to violet. Citric acid and citrates do not react in this way.

Further examples of the usefulness of ferric chloride you can try out by a multiple spot test. On a strip of filter paper spot drops of solutions of salicylic acid (or of a soluble salicylate), phenol, gallic acid, tannic acid and pyrogallol (Fig. 2). On each spot put a drop of ferric chloride solution. The



Fig. 2—A fivefold spot test with ferric chloride

basin with a small flame. The spot blackens at once and gas is given off. Citric acid and citrates behave like this, but are distinguished by the blackening taking place much more slowly.

Another good colour test for tartaric acid and its salts can be seen by putting a speck of one of them and about twice the amount of resorcinol in an ignition tube, adding a drop of strong sulphuric acid and warming very gently, when a bright red colour appears. Unless cautiously heated, charring will take place and the colour be masked. Hence heating up gradually in water (Fig. 1) is colours appearing are respectively violetred, violet, deep blue, blue-black and reddish-brown.

Uric acid gives two interesting reactions. Dissolve a little uric acid in a few drops of sodium carbonate solution. Put a drop of this solution on a slip of filter paper which has been moistened with a drop of silver nitrate solution. A black spot appears. You can find out how delicate this test is by repeatedly diluting the uric acid solution and carrying out the test again each time. Fairly dilute solutions yield a brown spot, highly dilute, a yellow.

Fig. 1—Gradual heating in the tartaric acid spot test.

Ferric chloride is a useful reagent for many tests, as we shall see in the course of this article. Two cases where it is employed are those of formates and acetates. Put a drop of ferric chloride solution into a small narrow test tube, such as an ignition tube, and add a drop of sodium formate solution. The yellow colour of the ferric chloride deepens to red. Boil the mixture over a small flame: A brown precipitate appears. Repeat the test using sodium acetate instead of sodium formate. The mixture reddens and gives a precipitate in the same way.

How are we to distinguish the two? Silver nitrate gives us the answer. Put a drop of sodium formate solution in an ignition tube, add a drop of silver nitrate solution, and boil the mixture. A black precipitate of metallic silver appears. If you repeat the test with sodium acetate



Another delicate test for uric acid is the murexide reaction. Put a speck of uric acid in an evaporating basin, cover it with a drop of nitric acid and evaporate just to dryness on the water-bath. A yellow spot is left. Remove the basin from the bath. Add a drop of ammonium hydroxide and a splendid violet spot appears. This consists of murexide. Formerly, murexide was widely used as a dye.

Formaldehyde is one of the organic substances which reduces Fehling's solution, and so the latter may be used in its detection. The reaction is quite delicate enough for a spot test. Put a drop of formalin (which is a solution of formaldehyde) into an evaporating basin. Spot with one drop of Fehling's solution and warm the basin gently over a small flame. The blue of the Fehling's solution turns to a reddish turbidity and finally red cuprous oxide takes its place.

Alcohol is readily detected by the iodoform test. Methylated spirit can serve as your alcohol source. Dilute it with an equal volume of water, put a drop in an evaporating basin, together with a drop of a solution of iodine in potassium iodide. Warm the basin on a water-bath. Add a drop or two of sodium hydroxide — enough to remove the brown colour of the iodine. Remove the basin from the bath and let it cool. Minute yellow crystals of iodoform appear in the spot and its characteristic smell will be noted.

Glycerine may be detected by a rather curious reaction. Into an evaporating basin put a drop of a 1 per cent solution of borax and a drop of phenolphthalein solution. A pink spot forms. Now dilute a little glycerine with an equal volume of water and add a drop of this solution to the basin. The spot is decolourised. Warm the basin. The colour reappears. On cooling it again disappears.

We have a similar 'come-and-go' behaviour with starch. Put a drop of starch paste into an evaporating basin and add a drop of iodine solution. An intense blue spot appears. Warm the basin. The spot decolourises. On cooling, it again reappears.

A variation of the starch reaction can be carried out on filter paper. It works with very dilute solutions. Simply put a drop each of starch paste and iodine solution on filter paper. Mere traces will give a blue spot.

Glucose is easily distinguished from ordinary sugar. Warm a speck of glucose with a drop of sodium hydroxide solution in an evaporating basin. The spot turns yellow then red-brown. By repeating the test with sugar, you will see that the spot remains colourless or only turns a very faint yellow. Now heat a drop of glucose solution and a drop of Fehling's solution in an evaporating basin. The blue spot turns reddish-brown. If you repeat the test with sugar, the blue will be unchanged.

The action of sulphuric acid is also decisive. Put a speck of glucose in an evaporating basin and add a drop of sulphuric acid. No change occurs. Warm the basin. The glucose chars giving a black spot. Repeat the test with sugar. As soon as the acid touches the sugar it chars — in the cold. We saw that glucose needed to be heated.

The two articles on spot tests will have shown vividly how neat the technique is. They have necessarily given only an introduction to the subject. By seeking books on spot tests in the libraries and outlaying on some of the many special reagents, you can go farther afield into a fascinating branch of chemistry. (L.A.F).

Next week's issue will contain patterns for making Doll's House Furniture and a Puzzle Box. Also details for converting a bed to a four-poster, projects for the handyman and usual features. MAKE SURE OF YOUR COPY

Interesting Locos–No. 17



THE French De-Glehn 4-cylinder compound locomotive is usually associated with the 'Atlantic' type, but in 1897 a small batch of fine 4-4-0 De-Glehn 4-cylinder compounds were built by La Société Alsacienne de Constructions Mécaniques at Belfort for the above line. They were an enlarged version of a previous series first built in 1892, and carried several modifications (and a greatly enlarged boiler) over the earlier engines.

Our illustration shows No. 2158 the first of the class. For many years these engines ran the well-known Continental trains between Paris and the coast, which were among the fastest and heaviest trains in the world at that time. Both engine and trains were kept in immaculate order, the engine being painted a light brown with polished steel and brasswork. At the time of their introduction these engines were very advanced in design for the period. They were exceptionally fast runners, this, in some respects, due to the excellent boiler, 6ft. 11 $\frac{1}{2}$ ins. diameter driving wheels and the long coupled wheelbase. The total heating surface of the boiler was 1,890 sq. ft. and the working pressure 213 lbs. per sq. in. Weight of engine in w/o was 50 $\frac{1}{2}$ tons. (A.J.R.)

Invaluable household equipment A PAIR OF FOLDING STEPS

PAIR of steps which fold flat for storage are invaluable for use in the kitchen or for small decorating jobs, when they may be used alone or in conjunction with larger steps for holding planks. Straight grained, knot free timber is advisable, and you will find Columbian pine ideal for the legs and strengtheners, using 2½in. by ½in. material.

By H. Mann

Fig. 1 shows the top of the steps in an inverted position, made from $\frac{1}{2}$ in. plywood measuring 15ins. by 16ins., rounded at the corners, glued and screwed to two stretchers each 15ins. by $2\frac{1}{2}$ ins. by 1in. The latter are fixed 10ins. apart and drilled for $\frac{1}{4}$ in. bolts which support the legs. The latter holes are $8\frac{3}{4}$ ins. apart as shown, the centres being $2\frac{2}{5}$ ins. from the ends of the stretchers.

The treads are made from 3in. by jin. material, and are wider than the legs, with a projection at the front, as shown in Fig. 2. Ultimately they are fitted into grooves cut in the front legs, glued and either nailed or screwed. These treads are best prepared after making the legs, but you should allow an overall length of 14ins., which is trimmed accordingly.

It will be seen that there are actually two pairs of legs, the front pair holding the two treads and the rear ones for support. First of all we will deal with the making of the front legs, made from



 $2\frac{1}{2}$ in. by $\frac{1}{2}$ in. material. You will require two pieces each 3ft. 3ins. long, rounded off at the tops to permit easy action in folding. Fig. 3 shows a side view of the legs with the positions for the treads indicated by dotted lines, and where grooves should be cut to half the width of the wood. Do not cut the legs to exact size at this stage, or arrange the feet angles. This is left for final adjustment.

Drill the top of the legs for bolt holes, temporarily fixing to the top and setting at an angle of 108° or 110°, when you will be able to mark off the tread positions and which must be parallel to the floor.

Two safety stays

For both safety and control of the steps, two stays are fitted, one on each side, made from 1in. by $\frac{1}{2}$ in. material and $20\frac{1}{2}$ ins. long. Holes are drilled in the stays at both ends, and one in the front and back legs of both sides, as indicated in the diagram. The hole in the front leg is made $8\frac{3}{4}$ ins. from the centre of the top hole for the bolt there, the stay ultimately being fastened with a small bolt.

The stay will fasten to the back leg approximately 23ins. from the top of the latter, but it is advisable to make a practical test before drilling in this way. Attach the rear legs temporarily, closing the steps together, so that the top falls to the back, and when the stay will automatically adopt the correct place. Mark the position for drilling through the hole prepared in the stay, proceeding accordingly and similarly for both sides.

Another important factor of the front legs is the stop made from $1\frac{1}{2}$ in. by $\frac{1}{2}$ in. material, and resting in notches cut out at the top of the legs. Fig. 4 shows this



arrangement quite clearly, but here again the exact position is best determined by a practical test. Open the steps to the required angle, holding the stop in position with its top edge firm against the edges of the two stretchers underneath the steps top. Held in this position it is quite easy to mark off the correct positions for the small notches, which can be removed, and the stop glued and screwed in place.

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Each joint has its own particular niche in the wide field of woodwork. It is important to know which joint should be used in a particular job to obtain the maximum strength and the best result. In this series, clear simple diagrams of several common joints will provide a quick reference section in times of doubt. Brief notes are appended where necessary and these include suggested uses of the joint.

No. 1. The Corner Half-lap Joint $D_{\rm protrude}^{\rm OTH}$ members of equal thickness — allow both ends of the joint to protrude $\frac{1}{16}$ in. to be cleaned off later. Fix by means of glue and countersunk screws. Remove both halves by careful sawing on the waste side of the line. Sink screws below level of surface to facilitate cleaning up and to avoid damage to plane blade.



Used in all types of softwood frames, e.g., doors for hutches, kitchen cabinets to receive plywood fronts, firescreens to receive facings of hardboard or plywood and edged with mouldings, etc.

No. 2. The Cross Halving Joint IMILAR to joint No. 1, but used to enable rails to cross instead of to meet at 90°. Half the thickness of wood removed from each member. Make very slightly narrower than width of wood to allow for one shaving from each edge in cleaning up prior to gluing. Remove waste by sawing down to gauge line and then chiselling in thin layers from opposite directions and meeting in the middle. Make sure bottom of trench is truly flat.

Used in soft and hardwoods where rails cross, e.g., underframing on tables, stools, etc.

No. 3. The Through Housing Joint THE trench should not be more than half the thickness of the wood in depth. Saw down the sides of the trench (on the waste side of the line) and remove waste with chisel







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and mallet. Work from opposite sides and make sure bottom of trench is level. The end of the 'entering' piece should be planed square. Make joint on the tight side to allow for the 'entering' piece to be cleaned up. Fix with glue and nails.

Main use, for rough shelving or removable divisions in workboxes, etc.

No. 4. The Stopped Housing Joint

VERY similar to No. 3. Small notch cut out of leading edge to correspond with depth of groove. Form trench by chopping a square hole to required depth at stopped end of groove, then use saw in very short strokes. Chisel out waste from one end only.

Used in good quality shelving, permanent divisions, etc. Better finished appearance than through housing.

A Pair of Folding Steps

The rear legs are shown in Fig. 5 and involve elementary cross bracing only, the positions of the two cross-members are shown, and a further diagonal bracer is screwed on the edges of the legs. The two cross-members are let into notches cut into the rear edges of the legs.

At this stage the width of the legs can be verified, and the treads prepared accordingly, and it should be noted that it is wise to add a further bracer in the form of a bolt. The latter should be $\frac{1}{2}$ in. in diameter, steel, and fitted underneath the centre of the lower tread. A hole is required in each leg to accept this bolt, which is threaded at the ends and secured by nuts after adding suitable washers. Washers should be inserted between the legs and stretchers fixed to the top, and behind the nuts and boltheads. Sometimes it is advisable to fit spring washers behind the nuts to obviate any danger of the latter working loose.

The feet of the steps are trimmed by placing the assembled article on a really level surface, marking with the aid of a piece of wood laid on this surface, and sawing off the subsequent waste. All sharp edges should be glasspapered to avoid splinters, and the whole generally cleaned up.

It is not always advisable to paint household steps, since this adds to the weight and hides defects. An application of two coats of ordinary linseed oil followed by varnishing is all that is required. The oil should be allowed a week for absorption into the wood and drying.



To the anglet who has confined his activities to float fishing let me advise him to try spinning for a change. He will find that it affords a nice change and is a profitable way of taking fish and, moreover, a sporting one. In winter it also helps him to keep warm on the coldest day.

Many anglers seem to be of the opinion that this is an expensive branch of the sport, but it is possible to make all the tackle required (except, perhaps, the reel), on the kitchen table at home, and what better than to spend one or two winter evenings making spinners which will take a few fish at the week-end?

The spinner I have in mind is made from rubber or plastic tubing and the diameter of this is left to the angler's own fancy but should not be more than say, half an inch. The length again, is to the individual's choice.

At each end of the tube make two cuts so that you have two 'V's (see Fig. 1). For weight for the body I use a barrel lead which is of a size suitable to be a tight fit inside the tube. In one end a saw-cut is made about $\frac{1}{8}$ in. in depth and this is to take the cross-piece of the vanes (Fig. 2).

Through the centre is a length of Alasticum wire which is twisted and at one end the hook is wired on, the hook





of course being a treble which can be either eyed or taper-shanked (Fig. 3).

The two ends of the wire come out at the head of the spinner and sufficient length should be allowed for binding in the spinning vanes and for the swivel.

The vane is made from a piece of aluminium, this metal being easy to cut with scissors. It should be thin of course and the shape should be as shown at Fig. 4. Now pass the wire through the body and through the hole in the lead and whip the two 'V's at the hook end down tight onto the shank of the hook. After binding, seal the whipping with your waterproof cement. The ends of the wire should come one on each side of the cross-piece of the vane and a twist put in tight on the cross-piece to hold it in position (see Fig. 4A). The cross-piece of the vane goes in between the two 'V's at the top and fits into the cut made in the lead after which the two 'V's are also tightly whipped and your spinner should now appear as at Fig. 5.

All that remains to be done is to attach the swivel and paint the body to any colour you fancy. The complete spinner costs about 6d. and I have taken more than one salmon on this particular type.

Minnows for catching Trout

URING March trout-fishing commences in many waters. Spinning is an artistic and sportsmanlike method of trout fishing and often deadly to the bigger fish of stream and reservoir, etc. It is an art calling for some practice. Both natural and artificial baits may be used, a natural minnow on a spinning flight being very killing on occasion. Stun the bait before impaling it on the hooks when using fresh-caught minnow. Smallish minnow are the better for the average trout-water.

The rod for spinning for trout should be about 11ft. in length and fairly stiff in action; the reel about 2½ins. with 30 yards of line medium strength. The casting swivel is about 6ft. long, tapered, with one swivel some 18ins. from the bait, and the other the same distance or a little more higher up. When fishing in fast, deepish waters a small lead may be pinched on the cast to keep the bait down towards the bottom of the swim. Preserved minnows are useful, but fresh ones are better. A supply can be carried in a small bottle three parts filled with water. Cork the bottle — the shaking of it in your bag or pocket will keep the water sufficiently aerated.

Thread-line fishing when spinning for trout is good fun. In his book 'The Science of Spinning for Salmon and Trout' the late Mr. Wanless says: 'There is no pleasanter sport than spinning for river trout with the thread-line, dry fly fishing excepted. But the thread-line has a fascination which even the dry fly lacks. It is, for one reason, much more difficult. I do not, of course, refer to spinning in large rivers, but in streams varying from ten to twenty yards in width, well bushed and banked, with plenty of small pools and broken water.'

There is, indeed, much that is fascinating in spinning for the river trout or the lake trout in varied waters, and the ardent angler cannot fail to enjoy the very motion of casting a good line into the water and dropping the minnow into the desired spot.

Periods after a spate, whilst the water is still somewhat coloured, is a likely time for minnow spinning. Fish downstream, casting down and across the water, drawing the spinning bait round to your side of the water by short, slow jerks, is the advice of an expert. Strike instantly you feel a fish. Sometimes a trout will pursue the minnow to the bank and grab it when the angler is about to withdraw it and make a re-cast. Be prepared for such an eventuality. In very fine water finer tackle is needed than in tinted waters.

There are many kinds of artificial spinning baits, just as there are many patterns of flies. The Devon, Wagtail, Quill minnow are a likely trio. Plugs are useful at times. For ordinary river trout spinners are made in smaller sizes than for sea-trout. Despite the use of a wobbling bait, liked by some spinning anglers, the bait having a true straight spin is the more effective. (A.S.)



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HUNGARY - By R.L.C.

stamp hero; his crown, a popular watermark. Besides adorning various anniversary sets, the 'Apostolic King' is featured in many ordinary issues.

A 1923 set is dedicated to Alexander Petofi, the Hungarian poet (5 values, 2/9 used). The 50 k. brown-purple — 'Petofi addressing the people' — brings to mind the poet's greatest work: Talpra Magyar.

[•]Magyars, up! Your country calls you; Break the chains which now enthrall you; Freeman be, or slaves for ever.

Choose ye, Magyars, now or never; For by the Magyars' God above we truly swear.

We truly swear the tyrant's yoke no more to bear.'

Stamps depicting other Hungarian celebrities — essential for recording the Hungarian Saga—may be cheaply obtained. Here's a brief but useful check list: '1900. 1 k. red — Emperor of Austria wearing Hungarian Crown — 1d. used. 1916. 10 f. mauve — Queen Zita — 3d. mint. 1919 various portraits — set of 5, 4/9 used. 1929. 8 f. green — Admiral Horthy — 2d. used. 1930. Various Hungarian Saints — set of 4, 4/6 used. 1932. Famous Hungarians — set of 14, 1/6 used, etc. etc.'

The Royal Palace at Budapest (the capital) with its 830 rooms is one of the world's most magnificent buildings. '1928. 30 f. green — 2d. used.' And the city has been justly named 'Budapest the Beautiful'.

St. Matthias' Church, Budapest, was commenced in the Romanesque style by Bela IV, and completed two centuries later in Gothic. The elaborate coat of arms of Matthias Corvinus occupies a prominent place to the right of the main entrance. '1926. 20 f. Red — 1d. used.'

Hungary is mainly an agricultural country, but coal occurs in the bend of the Danube near Budapest and also in the south-west. '1950. Five Year Plan — 14 industrial pictorials — 9/- used.'



Can We Help?

Several readers have expressed interest in the 'Can we help each other?' service which we announced in our issue of December 31st.

We will print any such request or offer in these columns and subsequent correspondence will be on a reader-toreader basis and not through the Editor.

As an instance of this interest, W. McMurray of An Airigh, Ashgrove, Elgin, Morayshire, writes :---

For some time now 1 have been anxious to obtain a copy of Hobbies design for the *Queen Mary* No. 198 Special. Even a loan of the design would be appreciated, and if any reader can help me I would be much obliged. I have some old pre-war designs which may be of interest to others, the model of "Big Ben" clock being most outstanding. I am also interested in pre-1940 Handbooks."

Another example of a request for a design, which is also combined with an offer to other readers, comes from G. Beardwell of 186 Whalebone Lane Sth., Dagenham, Essex, who seeks help in obtaining the design of the Corridor Railway Coach (No. 75 Special) and Engine and Tender (No. 905 A and B), which were published about twenty years ago. This reader would also like a copy of the 'Big Ben' Design No. 209 Special. 'I have a good many designs, some old and a good many new, which may help fretworkers', says Mr. Beard-

well, who also offers the design of Buckingham Palace, No. 214 Special to anybody interested.

Mr. W. Custerson, 6 Avon Grove, Rivers Estate, Bletchley, Bucks.:— Would be more than pleased to be put in touch with any reader who can give any information regarding a model of the 'Taj Mahal' (Design No. 202 Special) or any similar type of model.

G. J. Gibbins of 43 Green Leys, St. Ives, Huntingdon, is also seeking the 'Taj Mahal' design.

Two fort designs are requested by J. A. Steel, 35 Patrick Ave., Orrell, Bootle 20, Liverpool, Lancs. They are No. 189 Special, featuring four domed towers, and No. 212 Special.

Anyone who would like to co-operate with these readers should write to them direct.



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